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\* \* \* \* \* Welcome to STN International \* \* \* \* \*

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	SEP 09	CA/CAPLUS records now contain indexing from 1907 to the present
NEWS	4	AUG 05	New pricing for EUROPATFULL and PCTFULL effective August 1, 2003
NEWS	5	AUG 13	Field Availability (/FA) field enhanced in BEILSTEIN
NEWS	6	AUG 18	Data available for download as a PDF in RDISCLOSURE
NEWS	7	AUG 18	Simultaneous left and right truncation added to PASCAL
NEWS	8	AUG 18	FROSTI and KOSMET enhanced with Simultaneous Left and Right Truncation
NEWS	9	AUG 18	Simultaneous left and right truncation added to ANABSTR
NEWS	10	SEP 22	DIPPR file reloaded
NEWS	11	DEC 08	INPADOC: Legal Status data reloaded
NEWS	12	SEP 29	DISSABS now available on STN
NEWS	13	OCT 10	PCTFULL: Two new display fields added
NEWS	14	OCT 21	BIOSIS file reloaded and enhanced
NEWS	15	OCT 28	BIOSIS file segment of TOXCENTER reloaded and enhanced
NEWS	16	NOV 24	MSDS-CCOHS file reloaded
NEWS	17	DEC 08	CABA reloaded with left truncation
NEWS	18	DEC 08	IMS file names changed
NEWS	19	DEC 09	Experimental property data collected by CAS now available in REGISTRY
NEWS	20	DEC 09	STN Entry Date available for display in REGISTRY and CA/CAPLUS
NEWS EXPRESS			NOVEMBER 14 CURRENT WINDOWS VERSION IS V6.01c, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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\*ENCOMPPAT - EnCompass Patent File 1964-present (Supporters)  
\*ENCOMPPAT2 - EnCompass Patent File 1964-Present (Non-Supporters)

\* The files listed above are temporarily unavailable.

FILE 'HOME' ENTERED AT 11:48:08 ON 14 DEC 2003

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 11:48:17 ON 14 DEC 2003

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Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 12 DEC 2003 HIGHEST RN 626603-92-7

DICTIONARY FILE UPDATES: 12 DEC 2003 HIGHEST RN 626603-92-7

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d

ENTER NAME OF ITEM TO BE DISPLAYED OR (?):

Uploading

'UPLOAD' IS NOT VALID HERE

For an explanation, enter "HELP DISPLAY".

=> 09893858.str

0 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

For a list of commands available to you in the current file, enter

"HELP COMMANDS" at an arrow prompt (=>).

=>

0 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

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"HELP COMMANDS" at an arrow prompt (=>).

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0 IS NOT A RECOGNIZED COMMAND

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0 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

For a list of commands available to you in the current file, enter

"HELP COMMANDS" at an arrow prompt (=>).

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0 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

For a list of commands available to you in the current file, enter

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0 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

For a list of commands available to you in the current file, enter

"HELP COMMANDS" at an arrow prompt (=>).

=> d

ENTER NAME OF ITEM TO BE DISPLAYED OR (?) :end

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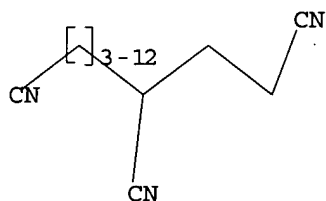
Uploading 09893858.str

L1 STRUCTURE UPLOADED

=> d

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1 full

FULL SEARCH INITIATED 11:49:12 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 7824 TO ITERATE

100.0% PROCESSED 7824 ITERATIONS

48 ANSWERS

SEARCH TIME: 00.00.01

L2 48 SEA SSS FUL L1

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

148.55

148.76

FILE 'CAPLUS' ENTERED AT 11:49:19 ON 14 DEC 2003

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FILE COVERS 1907 - 14 Dec 2003 VOL 139 ISS 25  
FILE LAST UPDATED: 12 Dec 2003 (20031212/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s l2
L3          68 L2

=> s l3 and acrylonitrile
      83204 ACRYLONITRILE
      937 ACRYLONITRILES
      83461 ACRYLONITRILE
              (ACRYLONITRILE OR ACRYLONITRILES)
L4          39 L3 AND ACRYLONITRILE

=> s l4 and dinitrile
      1821 DINITRILE
      1291 DINITRILES
      2645 DINITRILE
              (DINITRILE OR DINITRILES)
L5          0 L4 AND DINITRILE

=> d ibib abs hitstr tot l4
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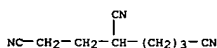
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L4 ANSWER 1 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 2003:532626 CAPLUS  
 DOCUMENT NUMBER: 139:86730  
 TITLE: Preparation of a polycarboxylic acid mixture  
 containing mainly 1,3,6-hexanetricarboxylic acid  
 Inventor(s): Date, Hideki; Shimoda, Teruyoshi  
 Patent Assignee(s): Asahi Kasei Kabushiki Kaisha, Japan  
 Source: PCT Int. Appl., 97 pp.  
 CODEN: FIKXD2  
 Document Type: Patent  
 Language: Japanese  
 Family Acc. Num. Count: 1  
 Patent Information:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003055836	A1	20030710	WO 2002-JP13808	20021227

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SH, TD, TG

PRIORITY APPLN. INFO.: JP 2001-397451 A 20011227  
 AB This document discloses a polycarboxylic acid mixt. having a 1,3,6-hexanetricarboxylic acid (I) content of 80 wt.% or higher, characterized by having a psychometric lightness L of 98 or higher, a chromaticness index a of -2.0 to 2.0, a chromaticness index b of -2.0 to 3.0, and a nitrogen content of 5,000 wt.ppm or lower. The above mixt. was obtained by hydrolysis of a mixt. contg. mainly 1,3,6-tricyanohexane. I is useful as a hardener for compds. contg. epoxy functions and is used in coatings.  
 IT 1772-25-4P, 1,3,6-Tricyanohexane  
 RL: BYP (Byproduct); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. of polycarboxylic acid mixt. contg. mainly 1,3,6-hexanetricarboxylic acid as hardener for epoxy resins)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

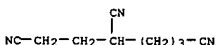


REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L4 ANSWER 2 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 2003:525387 CAPLUS  
 DOCUMENT NUMBER: 139:68954  
 TITLE: Preparation of colorless 1,3,6-hexanetricarboxylic acid from 1,3,6-tricyanohexane as byproducts of electroreduction of acrylonitrile  
 Inventor(s): Ubutame, Takuji; Shimoda, Akiyoshi  
 Patent Assignee(s): Asahi Kasei Corporation, Japan  
 Source: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 Document Type: Patent  
 Language: Japanese  
 Family Acc. Num. Count: 1  
 Patent Information:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003192631	A2	20030709	JP 2001-397453	20011227

PRIORITY APPLN. INFO.: JP 2001-397453 20011227  
 AB 1,3,6-Hexanetricarboxylic acid (I) and/or its salts are prepd. by (A) hydrolysis of crude 1,3,6-tricyanohexane (II) obtained by electroredn. of CH3CN and (B) crystn. Thus, a mixt. contg. II 93.3, 3-cyanomethyl-1,5-dicyanopentane 5.8, and adiponitrile 0.9% was hydrolyzed with NaOH, neutralized, water added, and cooled to 3-10.degree. to give 73.9% I having purity of 99.6% and L value of 98.94.  
 IT 1772-25-4P, 1,3,6-Tricyanohexane  
 RL: BYP (Byproduct); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (crystn. of hexanetricarboxylic acid prepd. from tricyanohexane as byproducts of electroredn. of acrylonitrile)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

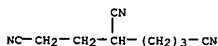


L4 ANSWER 1 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

L4 ANSWER 3 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 2003:525386 CAPLUS  
 DOCUMENT NUMBER: 139:68953  
 TITLE: Preparation of colorless 1,3,6-hexanetricarboxylic acid from 1,3,6-tricyanohexane as byproducts of electroreduction of acrylonitrile  
 Inventor(s): Shimoda, Akiyoshi; Ishida, Hiroshi  
 Patent Assignee(s): Asahi Kasei Corporation, Japan  
 Source: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 Document Type: Patent  
 Language: Japanese  
 Family Acc. Num. Count: 1  
 Patent Information:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003192630	A2	20030709	JP 2001-397452	20011227

PRIORITY APPLN. INFO.: JP 2001-397452 20011227  
 AB 1,3,6-Hexanetricarboxylic acid (I) and/or its salts are prepd. by (A) hydrolysis of crude 1,3,6-tricyanohexane (II) obtained by electroredn. of CH3CN and (B) treatment of the reaction mixts. with oxidizing agents. Thus, a mixt. contg. II 93.3, 3-cyanomethyl-1,5-dicyanopentane 5.8, and adiponitrile 0.9% was hydrolyzed with NaOH to give pale brown I, which was dissolved in water and treated with ozone for bleaching.  
 IT 1772-25-4P, 1,3,6-Tricyanohexane  
 RL: BYP (Byproduct); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (O3 bleaching of hexanetricarboxylic acid prepd. from tricyanohexane as byproducts of electroredn. of acrylonitrile)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 5 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

$$\begin{array}{c} \text{CN} \\ | \\ \text{NC}-\text{CH}_2-\text{CH}_2-\text{CH}-(\text{CH}_2)_3-\text{CN} \end{array}$$

REFERENCE COUNT: 8

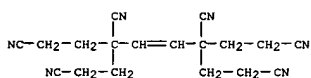
RECORD. ALL CITATIONS AVAILABLE IN THE RE

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001081612	A1	20020307	WO 2001-EP100225	20010830
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DP, EC, EG, EE, ES, FI, GG, GD, GE, GR, GM, HR, HU, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RU, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VU, YU, ZA, ZW, AM, AU, AZ, BZ, CG, KZ, MD, RU, TJ, TM, RW: GH, GM, KE, LS, MW, MG, SD, SI, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, NE, SN, TD, TG			
DE 10042835	A1	20020314	DE 2000-10042835	20000830
EU 2001091811	A5	20020313	AU 2001-91811	20010830
EP 1315824	A1	20030604	EP 2001-971983	20010830
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRIORITY APPLN. INFO.:			DE 2000-10042835 A	20000830
			WO 2001-EP100225	20010830
OTHER SOURCE(S):	CASREACT 136:215533			
AB	The invention relates to the enzymic reaction of compds. having at least one nitrile function and/or at least one amide function with at least one microorganism and/or at least one nitrile hydrolase/amidase complex isolated from Rhodococcus erythropolis DSM 13002, Rhodococcus erythropolis DSM 13475 and Rhodococcus erythropolis DSM 13476. Thus, free cells of Rhodococcus erythropolis DSM 13002 reduced - 90 mM propanenitrile to produce propanamide in 15 min. The resulting propanamide was then slowly deamidated to produce propanoic acid.			
IT	1772-25-4, 1,3,6-Hexanetricarbonitrile RL: BSU (Biological study, unclassified); BIOL (Biological study) (enzymic redn. and deamidation with Rhodococcus nitrile hydratase and amidase)			
RN	1772-25-4 CAIUSU			
CN	1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)			

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
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L4 ANSWER 7 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1998:596898 CAPLUS  
 DOCUMENT NUMBER: 129:289789  
 TITLE: The kinetics and mechanism of the phosphorus-catalyzed dimerization of acrylonitrile  
 AUTHOR(S): Hall, C. Dennis; Lowther, Nicholas; Tweedy, Bruce R.; Hall, Adam C.; Shaw, Gordon  
 CORPORATE SOURCE: Dept. of Chemistry, King's College, London, WC2R 2LS, UK  
 SOURCE: Journal of the Chemical Society, Perkin Transactions 2: Physical Organic Chemistry (1998), (9), 2047-2054  
 CODEN: JCPKDH; ISSN: 0300-9580  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Iso-Pr diarylphosphinites (Ar2POPri) catalyze the dimerization of acrylonitrile (AN) to a mixt. of cis- and trans-1,4-dicyanobut-1-ene (cis,trans-DCB-1), trans-1,4-dicyanobut-2-ene (DCB-2) and 2,4-dicyanobut-1-ene (MGN). The kinetics and mechanism of the reaction, which is a potential source of hexamethylenediamine, are reported in detail and the factors which govern rate and selectivity to DCB-1 and DCB-2 rather than MGN are elaborated.  
 IT 68334-52-1P  
 RL: BYP (Byproduct); PREP (Preparation)  
 (byproduct; kinetics and mechanism of the phosphorus-catalyzed dimerization of acrylonitrile)  
 RN 68334-52-1 CAPLUS  
 CN 4-Octene-1,3,6,8-tetracarboxitrile, 3,6-bis(2-cyanoethyl)- (7CI, 9CI) (CA INDEX NAME)

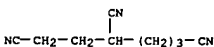


REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS  
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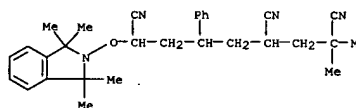
L4 ANSWER 9 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1998:196292 CAPLUS  
 DOCUMENT NUMBER: 128:218622  
 TITLE: Use of hexanetricarboxylic acid as a complexing agent or builder in detergent formulations  
 INVENTOR(S): Birgit  
 PATENT ASSIGNEE(S): BASF A.-G., Germany  
 SOURCE: Ger. Offen., 13 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19637428	A1	19980319	DE 1996-19637428	19960913

 PRIORITY APPLN. INFO.: DE 1996-19637428 19960913  
 AB 1,3,6-Hexanetricarboxylic acid (I: a byproduct of acrylonitrile manuf.) or its alkali metal or ammonium salt is used as a complexing agent or (co)builder in laundry detergents and cleaning agents, showing improved biodegradability over EDTA. Thus, 1,3,6-tricyanoheptane was hydrolyzed in 20% NaOH and acidified with concd. H2SO4 to give I. An effective cleaning agent for stainless steel brewing tanks at 60-80.degree. was prepd. by combining 50% KOH 40, 30% soln. of the tri-Na salt of I 20, ethoxylated isotridecanol and isononanoic acid 3, aliph. carboxylic acid mixt. 3, and water 34 wt.%.  
 IT 1772-25-4, 1,3,6-Tricyanoheptane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (use of hexanetricarboxylic acid as complexing agent or builder in detergent formulations)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarboxitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

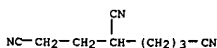


L4 ANSWER 8 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1998:583634 CAPLUS  
 DOCUMENT NUMBER: 129:276394  
 TITLE: Initiation mechanisms in free radical polymerization: competitive reaction of cyanoisopropyl radicals with styrene and acrylonitrile  
 AUTHOR(S): Busfield, W. Ken; Jenkins, Ian D.; Le, Phuc Van  
 CORPORATE SOURCE: School of Science, Griffith University, Brisbane, 4111, Australia  
 SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (1998), 36(13), 2169-2176  
 CODEN: JPACJC; ISSN: 0887-624X  
 PUBLISHER: John Wiley & Sons, Inc.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The competitive reactions of cyanoisopropyl radicals with mixed monomers styrene and acrylonitrile were studied using the nitroxide radical trapping technique. When the trap concn. is low, second, third, and even fourth generation (in terms of successive monomer addn.) carbon radicals were obsd. as trapped products. The ratio of rate consts. for the addn. of styrene and acrylonitrile to cyanoisopropyl radicals is 2.7 at 75.degree. and 5.3 at 105.degree.. These values were compared with the ratios for reactions of these two monomers with other radicals and the mechanism is discussed in terms of polarity of radicals and monomers.  
 IT 213916-14-4P  
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
 (initiation mechanism and competitive reaction of cyanoisopropyl radicals with styrene and acrylonitrile in radical polymn.)  
 RN 213916-14-4 CAPLUS  
 CN 1,5,7-Octanetricarboxitrile, 1-((1,3-dihydro-1,1,3,3-tetramethyl-2H-isindol-2-yl)oxy)-7-methyl-3-phenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS  
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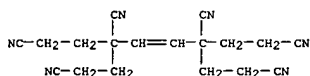
L4 ANSWER 10 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1998:90235 CAPLUS  
 DOCUMENT NUMBER: 128:197887  
 TITLE: Electroorganic synthesis and product recovery  
 AUTHOR(S): King, Chris J. H.; Cutchens, Charles E.  
 CORPORATE SOURCE: Solutia, Inc., Pensacola, FL, USA  
 SOURCE: Electrochemical Processing Technologies, International  
 Forum, Electrolysis in the Chemical Industry, 11th, Clearwater Beach, Fla., Nov. 2-6, 1997 (1997), 247-258. Electrosynthesis: Lancaster, N. Y.  
 CODEN: 650RAS  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 AB The problems of formation unstable polymer from monomers formed from de-cyanoethylation that leads to carbonization and fouling of column surfaces, the instability of cyanoethylation products that leads to refined adiponitrile (ADN) contg. unexpected level of impurities which reduce hydrogenation catalyst activity in the electrohydrodimerization (HMD) process are discussed. It is noted that in the cell operation it is necessary to prevent formation of reversible cyanoethylated impurities to avoid yield losses, ADN refining train fouling, catalyst poisons and undesirable impurities in refined HMD.  
 IT 1772-25-4P, 1,3,6-Hexanetricarboxitrile  
 RL: BYP (Byproduct); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
 (electroorg. synthesis and product recovery)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarboxitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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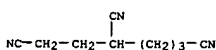
L4 ANSWER 11 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1995:520920 CAPLUS  
 DOCUMENT NUMBER: 123:227616  
 TITLE: Catalytic dimerization of acrylonitrile. I.  
 Homogeneous catalysts from alkyl diarylphosphinites  
 and dialkyl arylphosphonates  
 AUTHOR(S): Jennings, J. R.; Cozens, R. J.  
 CORPORATE SOURCE: University of Durham, Industrial Research  
 Laboratories, South Road, Durham, DH1 3LE, UK  
 SOURCE: Applied Catalysis, A: General (1995), 124(2), 297-315  
 CODEN: ACAGE4; ISSN: 0926-860X  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Acrylonitrile has been converted catalytically to the straight  
 chain dimer, 1,4-dicyanobutene-1, for the first time with both high  
 selectivity to the linear dimer and in high yield on acrylonitrile  
 consumed. The catalyst is an arom. phosphinite or phosphonite, in a  
 reaction medium which contains alc., hydrocarbon and acrylonitrile  
 , and which must be purified rigorously from traces of water and phenolic  
 stabilizers normally present in com. acrylonitrile, otherwise  
 catalyst deactivation results. The catalysts were discovered during  
 detailed investigations into the activities of related heterogeneous  
 catalysts which had also been discovered to give high selectivities to  
 the linear dimer, but in a poorly reproducible manner. The dimerization is  
 thought to proceed via the formation of ylide and betaine intermediates  
 derived from the addn. of the phosphorus deriv. to acrylonitrile  
 . The factors affecting catalyst performance and selectivity are  
 discussed. The product from each dimerization reaction was a mixt.  
 conth.  
 is- and trans-1,4-dicyano-1-butene, 1,4-dicyano-2-butene,  
 1,3-dicyano-1-butene, hexa-acrylonitrile, and others.  
 IT 68334-52-1P  
 RL: BYP (Byproduct); PREP (Preparation)  
 (catalytic dimerization of acrylonitrile using alkyl  
 diarylphosphinites and dialkyl arylphosphonite catalysts)  
 RN 68334-52-1 CAPLUS  
 CN 4-Octene-1,3,6,8-tetracarboxitrile, 3,6-bis(2-cyanoethyl)- (7CI, 9CI)  
 (CA INDEX NAME)



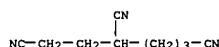
L4 ANSWER 13 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1989:57109 CAPLUS  
 DOCUMENT NUMBER: 110:57109  
 TITLE: Preparation of 4-aminomethyl-1,8-diaminooctane  
 INVENTOR(S): Yamataka, Kazunori; Oshima, Shozo  
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62270550	A2	19871124	JP 1986-113592	19860520
JP 67045440	B4	19950517		

PRIORITY APPLN. INFO.: CASREACT 110:57109  
 OTHER SOURCE(S):  
 AB H2N(CH2)3CH(CH2NH2)(CH2)4NH2 (I), useful as an epoxy curing agent,  
 anticorrosive agent, etc. (no data), was prepd. by electrolytic redn. of  
 CH2(CHCN (II) in the presence of quaternary ammonium salts, elimination  
 of  
 NC(CH2)4CN (III) to ltoreq.2% from the electrolytic soln. contg. III and  
 NCCH2CH2CH(CN)CH2CH2CH2CN (IV), mol. distn. of IV from the high b.p.  
 residue, and liq. phase hydrogenation of IV in the presence of Raney  
 catalysts. Thus, electrolysis was carried out in an electrolyzer contg.  
 10% aq. H2SO4 anolyte and a catholyte which consisted of a 2:8 (by vol.)  
 org. phase/aq. phase emulsion [org. phase composed of II, III, EtCN, IV,  
 and H2O; aq. phase contg. (Et4N)2SO4]. After electrolysis for 2000 h,  
 III  
 and IV were produced in 89% and 7.0% yield, resp. Then, III was removed  
 from the electrolytic soln. by distn. in 82% removal ratio to give a high  
 b.p. residue contg. 1.38% III, which was applied to mol. distn. to give a  
 distillate contg. 96.0% IV. Then, the distillate was autoclaved in the  
 presence of Raney Co and H2O under H at 150.degree. for 180 min to give  
 69% I (based on IV).  
 IT 1772-25-4P, 1,3,6-Hexanetricarbonitrile  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and hydrogenation of, in presence of Raney catalysts)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



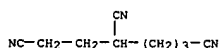
L4 ANSWER 12 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1991:417462 CAPLUS  
 DOCUMENT NUMBER: 115:17462  
 TITLE: Effect of surfactants on the electroreduction of  
 acrylonitrile  
 AUTHOR(S): Oniciu, Liviu; Silberg, Ioan A.; Lowy, Dan A.;  
 Jitaru, Maria; Ciomos, Florentina; Oprea, Ovidiu Horea; Toma,  
 Bogdan C.; Toma, Mariana  
 CORPORATE SOURCE: Dep. Phys. Chem., Univ. Cluj-Napoca, Cluj-Napoca,  
 Rom.  
 SOURCE: Revue Roumaine de Chimie (1990), 35(7-9), 859-66  
 CODEN: RRCHAX; ISSN: 0035-3930  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Comparative expts. of acrylonitrile electroredn. on Pb vs. PbO2  
 electrodes in neutral phosphate buffer, with - or without cationic  
 surfactants demonstrated that the selectivity of the process is  
 essentially under the control of the quality and quantity of the  
 quaternary ammonium salt added. Thus, in the absence of surfactants, the  
 process is directed towards the non-dimerizant electroredn. leading with  
 high selectivity to propionitrile, whereas at levels of about ten times  
 the crit. micellar concn. the surfactant ensures a preponderant formation  
 of the electrohydrodimerization products: adiponitrile and traces of  
 methylglutaronitrile. At the same time, the phase transfer catalysis  
 effect exerted by the surfactant entails, besides a favorable influence  
 on  
 the dimerizant electroredn., an increased formation of water  
 cyanoethylation products.  
 IT 1772-25-4P, 1,3,6-Tricyanohexane  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, as impurity, in electrochem. redn. of  
 acrylonitrile in presence of alkyltrimethylammonium surfactant)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 14 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1988:592566 CAPLUS  
 DOCUMENT NUMBER: 109:192566  
 TITLE: Selective process for epoxidation of styrene to  
 styrene oxide  
 INVENTOR(S): Barbe, Claude Edouard; Golitsch, Maria de Lourdes;  
 Aikawa, Lumi Tsuchiya  
 PATENT ASSIGNEE(S): Rhodia S. A., Brazil  
 SOURCE: Braz. Pedido PI, 10 pp.  
 CODEN: BPXDX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Portuguese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 8500801	A	19860923	BR 1985-801	19850215

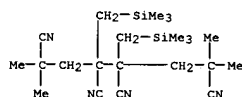
PRIORITY APPLN. INFO.: BR 1985-801 19850215  
 AB Styrene oxide is prepd. in high yields by the epoxidn. of styrene with  
 H2O2 in the presence of a nitrile (0.3-1.35 mol/mol styrene) in an alc.  
 medium maintained at pH 8.8-10.0 by adding an aq. alkali metal hydroxide  
 soln. Suitable nitriles are the 1,3,6-tricyanohexane-contg. byproduct of  
 the manuf. of adiponitrile and byproducts of the manuf. of  
 acrylonitrile.  
 IT 1772-25-4  
 RL: USES (Uses)  
 (in styrene oxide manuf. from styrene)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



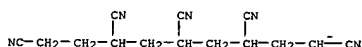


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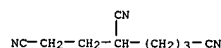
L4 ANSWER 15 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1988:37904 CAPLUS  
 DOCUMENT NUMBER: 108:37904  
 TITLE: Chemistry of organosilicon compounds. 226.  
 (2-cyanoallyl)trimethylsilane and (2-cyanoethyl)trimethylsilane. Unique .sigma..pi. captodative systems  
 AUTHOR(S): Sakurai, Hideki; Kyushin, Soichiro; Nakadaira, Yasuhiro  
 CORPORATE SOURCE: Fac. Sci., Tohoku Univ., Sendai, 980, Japan  
 SOURCE: Chemistry Letters (1987), (2), 297-300  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 108:37904  
 AB Addn. reactions of (2-cyanoallyl)trimethylsilane (I) as well as hydrogen abstraction reactions of (2-cyanoethyl)trimethylsilane (II) were examd. These compds. exhibit high reactivities in free-radical reactions, demonstrating existence of the .sigma..pi. captodative effect. Thus, pyrolysis of I in a sealed tube yielded only  
 Me3SiCH2CH(CN)CH2CH2C(CN):CHS  
 iMe3 and no cyclobutane deriv., as is the fate of the intermediate radical  
 formed from pyrolysis of acrylonitrile. A significant .sigma..pi. captodative effect stabilized the intermediate radical formed from I preventing ring closure under the exptl. conditions. Competitive bromination reactions of II and related substrates, including NCH2R (R = Me, Ph, SMe, OMe, O2CMe2), with NBS were performed to evaluate the relative stabilities of intermediate radicals formed during the hydrogen abstraction. The SMe group is an exceptionally strong donor in the captodative effect for stabilization of the radical and Me and O2CMe are weak donors. The Me3SiCH2, MeO, and Ph groups are of medium donor ability.  
 IT 112313-68-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, from dimerization of (cyanoallyl)trimethylsilyl radical)  
 RN 112313-68-5 CAPLUS  
 CN 2,4,5,7-Octanetetra-carbonitrile, 2,7-dimethyl-4,5-bis[(trimethylsilyl)methyl]- (9CI) (CA INDEX NAME)



L4 ANSWER 17 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1982:180673 CAPLUS  
 DOCUMENT NUMBER: 96:180673  
 TITLE: Anionic telomerization of acrylonitrile initiated by -CH2CN in the gas phase  
 AUTHOR(S): McDonald, Richard N.; Chowdhury, A. Kasem  
 CORPORATE SOURCE: Dep. Chem., Kansas State Univ., Manhattan, KS, 66506, USA  
 SOURCE: Journal of the American Chemical Society (1982), 104(9), 2675-6  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The title process involved the sequence NCH2- + CH2:CHCN .fwdarw. m/z 93 .fwdarw. m/z 146 .fwdarw. m/z 199 .fwdarw. m/z 252. Termination of the telomerization occurred at the tetrameric anion, and apparently resulted from intramol. ion-dipole assocn. of the anion growing end, -CHCN-, with  
 2 cyano groups on the telomer backbone. The data were simulated by computer, yielding the rate consts. for each step and an upper limit for the further telomerization of the tetrameric anion.  
 IT 81388-06-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 RN 81388-06-9 CAPLUS  
 CN 1,3,5,7,9-Nonanepentacarbonitrile, ion(1-) (9CI) (CA INDEX NAME)



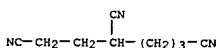
L4 ANSWER 16 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1987:184858 CAPLUS  
 DOCUMENT NUMBER: 106:184858  
 TITLE: Selectivity characteristics of the electrohydrodimerization of acrylonitrile  
 AUTHOR(S): Scott, K.; McConvey, I. F.; Henderson, J.  
 CORPORATE SOURCE: Dep. Chem. Eng., Teesside Polytech., Middlesbrough/Cleveland, TS1 3BA, UK  
 SOURCE: Journal of Applied Electrochemistry (1987), 17(2), 329-39  
 CODEN: JAELEBJ; ISSN: 0021-891X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A math. model of a reaction scheme for the electrohydrodimerization of acrylonitrile to adiponitrile in a loop reactor is presented. This model, which is based on a plug flow reactor with a recycle loop and continuous removal of the product, is used to simulate steady-state operation at various operating conditions. The effect of flow rate, c.d. and mass transport were investigated in terms of their effect on product distributions and selectivity. Overall, the reaction model deals with the formation of 5 products from the cathodic reactions.  
 IT 1772-25-4, 1,3,6-Tricyanohexane  
 RL: PROC (Process)  
 (transformation of, in electrohydrodimerization of acrylonitrile, math. model for)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 18 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1981:514820 CAPLUS  
 DOCUMENT NUMBER: 95:114820  
 TITLE: Adiponitrile from 1,3,6-tricyanohexane  
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

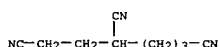
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56040656	A2	19810416	JP 1979-116687	19790913
JP 62015068	B4	19870406		

PRIORITY APPLN. INFO.: JP 1979-116687 19790913  
 AB Adiponitrile (I) was recovered from pyrolysis of 1,3,6-tricyanohexane (II) at 300-420.degree. in the liq. phase or at 400-600.degree. in the gas phase with or without a catalyst. Thus, silica gel contg. 1.5% NaOH was pelletized with bentonite, packed into a glass tube, and treated with 2 g II/h-mL catalyst at 450.degree./20-40 mm to give 53.6% I and 49.9% acrylonitrile with 81.9% conversion. K2CO3, MgO, KOH, KCN, Pt, V2O5, or Cr2O3 was also used.  
 IT 1772-25-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (pyrolysis of, adiponitrile from)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



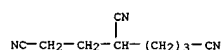
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L4 ANSWER 19 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1979:465194 CAPLUS  
 DOCUMENT NUMBER: 91:65194  
 TITLE: The Phillips' process for the electrohydrodimerization of acrylonitrile  
 AUTHOR(S): Childs, W. V.; Walters, H. C.  
 CORPORATE SOURCE: Phillips Pet. Co., Bartlesville, OK, 74004, USA  
 SOURCE: AIChE Symposium Series (1979), 75(185), 19-25  
 CODEN: ACSSQJ; ISSN: 0065-8812  
 JOURNAL  
 DOCUMENT TYPE: English  
 LANGUAGE: English  
 AB The Phillips' electrochem. process for converting acrylonitrile to adiponitrile employs an undivided cell with Pb electrodes and offers lower investment and lower energy costs compared to other similar processes. The electrolysis cell used in the process is described. The electrolyte is K phosphate with a trace of Bu<sub>4</sub>N<sup>+</sup>. The yield of adiponitrile depended on acrylonitrile level pH, tetraalkylammonium concn. and compn., electrolyte concn., c.d., and linear flow rate in the cell. The optimized efficiency was >90% which is comparable to other electrohydrodimerization processes. The terminal voltage was 4.0 V at 2 kA/m<sup>2</sup> and 50.degree..  
 IT 1772-25-4P  
 RL: FORM (Formation, nonpreparative); PREP (Preparation) (formation of, in acrylonitrile electrohydrodimerization)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

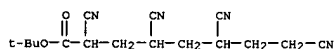


L4 ANSWER 20 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1979:88043 CAPLUS  
 DOCUMENT NUMBER: 90:88043  
 TITLE: Thermal conversion of 4-cyano-suberonitrile to acrylonitrile  
 INVENTOR(S): Campbell, Charles R.; Heckle, William A.; Mathews, Marion J.  
 PATENT ASSIGNEE(S): Monsanto Co., USA  
 SOURCE: U.S., 4 pp..  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

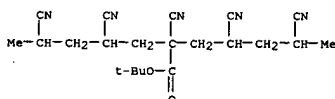
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4128571	A	19781205	US 1977-846100	19771027
PRIORITY APPLN. INFO.: AB 4-Cyanosuberonitrile (I) [1772-25-4] is continuously converted to acrylonitrile (II) [107-13-1] in a catalyst-free reaction at 700-800.degree. and vol. hourly space velocity (VHSV) 2600-8000. Thus, a mixt. of I 70.5, adiponitrile 2.5, and other materials 27% was fed into a 10 ft. times. 0.25 in. stainless steel tube at 750.degree. and VHSV 2632 (contact time 1.37 s) to give 30.9% II. Optionally, the feed mixt. can contain .ltoreq.2 parts propionitrile [107-12-0] diluent per part of the above feed mixt. IT 1772-25-4 RL: PROC (Process) (thermal conversion of, to acrylonitrile, noncatalytic) RN 1772-25-4 CAPLUS CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)				



L4 ANSWER 21 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1978:23446 CAPLUS  
 DOCUMENT NUMBER: 88:23446  
 TITLE: Synthesis of polyacrylonitrile oligomers. II. Saturated oligomers  
 AUTHOR(S): Ballard, Henri; Meybeck, Jean  
 CORPORATE SOURCE: Lab. Chim. Org. Ind., CNRS, Mulhouse, Fr.  
 SOURCE: European Polymer Journal (1977), 13(7), 617-21  
 CODEN: EUPJAG; ISSN: 0014-3057  
 JOURNAL  
 DOCUMENT TYPE: French  
 LANGUAGE: French  
 AB Eleven compds. RCH(CN)[CH<sub>2</sub>CH(CN)]<sub>n</sub>R<sub>1</sub> (I) were prepd. from the unsatd. CH<sub>2</sub>:CHCN oligomers. The unsymmetric compds. I (R = Me, R<sub>1</sub> = H; n = 1-3), e.g. MeCH(CN)[CH<sub>2</sub>CH(CN)]<sub>3</sub>H [64918-23-6] were prepd. by hydrogenation of CH<sub>2</sub>:C(CN)[CH<sub>2</sub>CH(CN)]<sub>n</sub>R and condensation of 1 or 2 mols. unsatd. oligomer with tert-Bu cyanoacetate [1116-98-9] followed by pyrolysis gave I (R = R<sub>1</sub> = Me; R = R<sub>1</sub> = H; n = 1-4), e.g. MeCH(CN)[CH<sub>2</sub>CH(CN)]<sub>2</sub>Me [17199-93-8] and CH<sub>2</sub>(CN)[CH<sub>2</sub>CH(CN)]<sub>2</sub>H [4379-04-8].  
 IT 64918-26-9P 64918-28-1P 64918-30-5P  
 64936-51-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (prepn. and pyrolysis of)  
 RN 64918-26-9 CAPLUS  
 CN Octanoic acid, 2,4,6,8-tetracyano-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

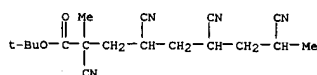


RN 64918-28-1 CAPLUS  
 CN Heptanoic acid, 2,4,6-tricyano-2-(2,4-dicyanopentyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

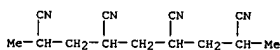


RN 64918-30-5 CAPLUS  
 CN Hexanoic acid, 2,4,6-tricyano-2-(2,4-dicyanobutyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

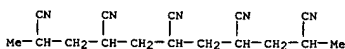
L4 ANSWER 21 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)  
 RN 64936-51-2 CAPLUS  
 CN Nonanoic acid, 2,4,6,8-tetracyano-2-methyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



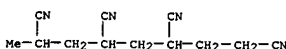
IT 64000-86-8P 64000-87-9P 64918-23-6P  
 64918-24-7P 64918-25-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)  
 RN 64000-86-8 CAPLUS  
 CN 2,4,6,8-Nonanetetracarboxitrile (7CI, 9CI) (CA INDEX NAME)



RN 64000-87-9 CAPLUS  
 CN 2,4,6,8,10-Undecanepentacarboxitrile (9CI) (CA INDEX NAME)



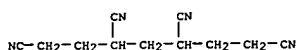
RN 64918-23-6 CAPLUS  
 CN 1,3,5,7-Octanetetracarboxitrile (9CI) (CA INDEX NAME)



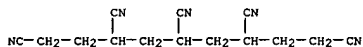
RN 64918-24-7 CAPLUS  
 CN 1,3,5,7-Heptanetetracarboxitrile (6CI, 9CI) (CA INDEX NAME)

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L4 ANSWER 21 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

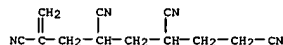


RN 64918-25-8 CAPLUS  
CN 1,3,5,7,9-Nonanepentacarbonitrile (9CI) (CA INDEX NAME)



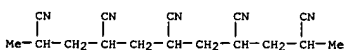
L4 ANSWER 22 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1978:7439 CAPLUS  
DOCUMENT NUMBER: 88:7439  
TITLE: Synthesis of polyacrylonitrile oligomers. I. Unsaturated oligomers  
AUTHOR(S): Balard, Henri; Meybeck, Jean  
CORPORATE SOURCE: Lab. Chim. Org. Ind., CNRS, Mulhouse, Fr.  
SOURCE: European Polymer Journal (1977), 13(7), 611-15  
CODEN: EUPJAG; ISSN: 0014-3057  
DOCUMENT TYPE: Journal  
LANGUAGE: French  
AB Five oligomers  $\text{CH}_2=\text{CN}(\text{CH}_2\text{CHCN})_n\text{R}$  (R = H or Me, n = 1-3), e.g. 2,4-dicyano-1-pentene [35299-21-9], were prep'd. by Bu3P catalyzed anionic oligomerization of acrylonitrile [107-13-1] and by Feit's iterative method. The 2 synthesis methods were discussed and the products were characterized by chromatog. and IR and NMR spectroscopy.  
IT 64918-32-7P  
RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)  
RN 64918-32-7 CAPLUS  
CN 7-Octene-1,3,5,7-tetracarbonitrile (9CI) (CA INDEX NAME)

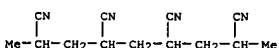


L4 ANSWER 23 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1977:518331 CAPLUS  
DOCUMENT NUMBER: 87:118331  
TITLE: Determination of the tacticity of polyacrylonitrile and its oligomers by carbon-13 NMR spectroscopy  
AUTHOR(S): Balard, Henri; Fritz, Hans; Meybeck, Jean  
CORPORATE SOURCE: Lab. Chim. Org. Ind., Ec. Super. Chim., Mulhouse, Fr.  
SOURCE: Makromolekulare Chemie (1977), 178(8), 2393-9  
CODEN: MACEAK; ISSN: 0025-116X  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The microtacticity of polyacrylonitrile (I) [25014-41-9] and its model compds., the dimer [15074-49-4], trimer [17199-93-8], and tetramer [64000-86-8] of acrylonitrile were detd. by 13C NMR spectroscopy. In the case of the oligomers, the carbons of the chain are the most stereosensitive ones, but for I the carbon of the cyano group was the most stereosensitive. The 13C NMR spectrum of I was composed of 10 peaks which can be assigned to the 10 possible pentad configurations.  
The 13C NMR technique allows for the direct estn. of the relative concns. of the different isomers in a mixt. and is, therefore, the best spectroscopic technique for controlling the efficiency of the methods used to sep. oligomer diastereoisomers.  
IT 64000-87-9  
RL: PRP (Properties) (NMR of)  
RN 64000-87-9 CAPLUS  
CN 2,4,6,8,10-Undecanepentacarbonitrile (9CI) (CA INDEX NAME)

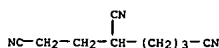


IT 64000-86-8  
RL: PRP (Properties) (tacticity of, detn. of, by carbon-13 NMR)  
RN 64000-86-8 CAPLUS  
CN 2,4,6,8-Nonanetetracarbonitrile (7CI, 9CI) (CA INDEX NAME)



L4 ANSWER 24 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1976:45883 CAPLUS  
DOCUMENT NUMBER: 84:45883  
TITLE: Acrylic fibers  
INVENTOR(S): Shimizu, Kunitoshi; Iwasa, Toshio; Seki, Shuji  
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKOXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:  
PATENT NO. KIND DATE APPLICATION NO. DATE  
JP 50111148 A2 19750901 JP 1974-13621 19740204  
PRIORITY APPLN. INFO.: JP 1974-13621 19740204  
AB Melt spinning blends contg. an acrylic polymer (contg. mainly acrylonitrile (I) units) and a I trimer, e.g., 1,3,6-tricyanohexane (II) [1772-25-4], or mixts. of oligomeric polyacrylonitrile [25014-41-9] contg. the trimer gave fibers with increased tensile strength. Thus, a mixt. contg. I 95, Me acrylate (III) 5, II 80, and tert-Bu peroxyvalerate 1.5 parts was polymd. 10 hr at 70.degree. to give a polymer (IV) [24968-79-4] mixt. IV mixt. (contg. II) was spun at 169.degree. and the spun fibers were drawn 200% in H2O at 100.degree. and heated 1 min at 135.degree. to give 2.7-denier/filament fibers with tenacity 4.81 g/denier and elongation 13.5%. Vinyl acetate-I copolymer [24980-62-9], Me methacrylate-I copolymer [30396-85-1], Na allylsulfonate-I-III copolymer [25053-78-5], 2-vinylpyridine-I copolymer [26836-60-2], and vinylidene chloride-I copolymer [9010-76-8] were also used.  
IT 1772-25-4  
RL: USES (Uses) (blends with acrylic polymers, spinning of, for increased tensile strength)  
RN 1772-25-4 CAPLUS  
CN 1,3,6-Hexanetetracarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

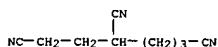


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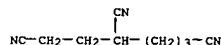
L4 ANSWER 25 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1976:32541 CAPLUS  
 DOCUMENT NUMBER: 84:32541  
 TITLE: Pilling-resistant acrylic fabrics  
 INVENTOR(S): Shimizu, Kunitoshi; Iwase, Toshimi; Seki, Shuji  
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 50111400	A2	19750902	JP 1974-17129	19740214
PRIORITY APPLN. INFO.:			JP 1974-17129	19740214

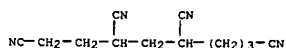
AB Finishing acrylic fabrics with aq. compns. contg. 1,3,6-tricyanohexane (I)  
 [1772-25-4] or 1-3-cyanomethyl-1,5-dicyanopentane (II) [16466-63-0] and optionally contg. oligomeric polyacrylonitrile [25014-41-9] gave fabrics with increased resistance to pilling. Thus, bulky Cashmilon (acrylic fibers) yarns were immersed in an aq. mixt. contg. I-II at 40.degree., padded to 3% pickup, dried, dyed, and finished with a softening agent. The pilling resistance rating (I. C. I. pilling tester) for a fabric knitted from the resulting yarns was 4.5, compared with 1.5 for a fabric knitted from the untreated yarns.  
 Acrylonitrile-methyl acrylate-sodium p-styrenesulfonate copolymer [27103-73-7] was also used.  
 IT 1772-25-4  
 RL: USES (Uses)  
 (finishing agents, for acrylic fabrics, for increased pilling resistance)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



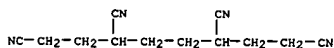
L4 ANSWER 26 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1972:85349 CAPLUS  
 DOCUMENT NUMBER: 76:85349  
 TITLE: Identification of high-boiling impurity in adipodinitrile, obtained from acrylonitrile  
 AUTHOR(S): Usova, E. P.; Upadysheva, A. V.; Mitina, L. I.; Grigor'eva, N. D.; Znamenskaya, A. P.  
 CORPORATE SOURCE: USSR  
 SOURCE: Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1971), 44(11), 2598-9  
 CODEN: ZPKHAB; ISSN: 0044-4618  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB 1,3,6-Tricyanohexane (I) was sepd. from adipodinitrile by preparative liq. chromatog. on Al2O3. I was also obtained by heating 1-amino-2-cyano-1-cyclopentene and acrylonitrile in C6H6 with a catalytic amt. Na 6-8 hr at 80.degree..  
 IT 1772-25-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (as impurity in adiponitrile)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 27 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1969:480616 CAPLUS  
 DOCUMENT NUMBER: 71:80616  
 TITLE: Electrolytic reductive oligomerization of acrylonitrile and related olefins  
 AUTHOR(S): Baizer, Manuel M.  
 CORPORATE SOURCE: Cent. Res. Dep., Monsanto Co., St. Louis, MO, USA  
 SOURCE: World Petrol. Congr., Proc., 7th (1968), Meeting Date 1967, Volume 5, 311-16. Elsevier Publ. Co. Ltd.: Barking, Engl.  
 CODEN: 21GNA6  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 AB The electrolytic reductive oligomerization of concd. solns. of acrylonitrile in hydrotropic electrolytes has been studied over a range of H2O concns. At high H2O content, propionitrile is the main redn. product; at intermediate concns., almost quant. yields of adiponitrile are obtained; in nearly anhyd. media hydrotimer, hydrotetramer as well as low-melting acrylonitrile polymers are formed. The probable mode of formation of this range of products is discussed. Electrolytic reductive dimerization was extended to include all monomeric activated olefins in which the activating group is itself not reduced; higher oligomerization was sought for and demonstrated in only a limited number of cases. The acrylonitrile dimer, .alpha.-methylene-glutaronitrile, underwent electrolytic reductive dimerization to yield an acrylonitrile hydrotetramer and mixed reductive coupling with acrylonitrile to yield acrylonitrile hydrotimer. The formation of oligomers from acrylonitrile on treatment with catalytic quantities of tertiary phosphines is discussed. The relevant literature on non-electrolytic methods for oligomerizing activated olefins is cited.  
 IT 1572-42-5P 1572-43-6P 1772-25-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 RN 1572-42-5 CAPLUS  
 CN 1,3,5,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1572-43-6 CAPLUS  
 CN 1,3,6,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



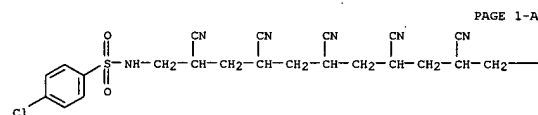
RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

L4 ANSWER 27 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

$$\begin{array}{c} \text{CN} \\ | \\ \text{NC}-\text{CH}_2-\text{CH}_2-\text{CH}-(\text{CH}_2)_3-\text{CN} \end{array}$$

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L4 ANSWER 28 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1969:439500 CAPLUS  
 DOCUMENT NUMBER: 71:39500  
 TITLE: Telomerization of acrylonitrile by  
 N,N-dichloro-p-chlorobenzenesulfonamide  
 Rybakova, N. A.; Freidina, R. Kh.  
 AUTHOR(S): Inst. Elementoorg. Soedin., Moscow, USSR  
 CORPORATE SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya  
 SOURCE: (1969), (5), 1194-5  
 CODEN: IASKA6; ISSN: 0002-3353  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB Heating 13 g. p-ClC6H4SO2NC12 with 5.3 g. CH2:CHCN and 1.43 g. dicyclohexyl peroxydicarbonate in CCl4 under N at 60-5.degree. for 1.5 hrs. gave a solid, which after washing with more CCl4 gave after treatment with EtOH 1.9 g. sol. C24H23Cl2N7O2S, m. 135-40.degree., and alc.-insol. material that was not identified. The sol. fractions were fractionated from CCl4 to yield 2.8 g. p-ClC6H4SO2NHCH2CHClCN and 2.5 g. p-ClC6H4SO2NH(C2CH(CN)2)2Cl, m. 68.degree., and mixed analogous telomers with 3-5 links of the acrylonitrile component, which were not sepd. From other similar runs with varying proportions of starting materials were isolated similar telomers from n = 1 to n = >6. The following were isolated in the pure state: p-ClC6H4SO2NH(CH2CH(CN))nCl: n = 7, decompd. 150-8.degree.; n = 9, decompd. 190-200.degree.; n = 14, decompd. 205-15.degree.. Ir spectra are reported.  
 IT 24729-16-6P 24729-17-7P 24729-18-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)  
 RN 24729-16-6 CAPLUS  
 CN Benzenesulfonamide, p-chloro-N-(12-chloro-2,4,6,8,10,12-hexacyanododecyl)- (8CI) (CA INDEX NAME)

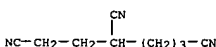


RN 24729-17-7 CAPLUS  
 CN Benzenesulfonamide, p-chloro-N-(14-chloro-2,4,6,8,10,12,14-heptacyanotetradecyl)- (8CI) (CA INDEX NAME)

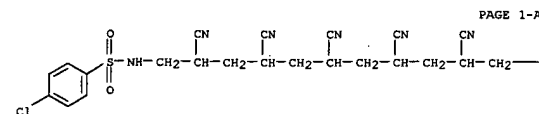
L4 ANSWER 29 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1968:96360 CAPLUS  
 DOCUMENT NUMBER: 68:96360  
 TITLE: Polyacrylonitrile  
 INVENTOR(S): Baizer, Manuel M.  
 PATENT ASSIGNEE(S): Monsanto Co.  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3375237	A	19680326	US 1964-422431	19641230

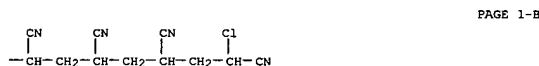
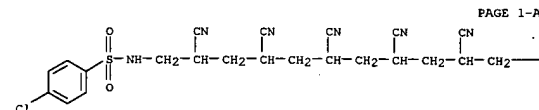
 PRIORITY APPLN. INFO.: Division of U.S. 3,245,889 (CA 64: 19920d). The disclosure is similar, but the claims are different.  
 AB 1772-25-4P  
 RL: PREP (Preparation) (prepn. of)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 28 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN (Continued)

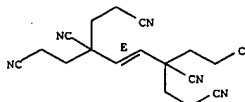


RN 24729-18-8 CAPLUS  
 CN Benzenesulfonamide, p-chloro-N-(18-chloro-2,4,6,8,10,12,14,16,18-nonacyanooctadecyl)- (8CI) (CA INDEX NAME)



L4 ANSWER 30 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1967:76086 CAPLUS  
 DOCUMENT NUMBER: 66:76086  
 TITLE: Reaction of phosphinous acid esters with acrylonitrile  
 AUTHOR(S): Dietsche, W. H.  
 CORPORATE SOURCE: Shell Grundlagenforsch. Ges., Schloss Birlinghoven, Siegburg, Germany  
 SOURCE: Tetrahedron Letters (1966), (51), 6347-51  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 AB Mixts. of H2C:CHCN and various diaryl and arylalkyl phosphinites, RR1POR2 (I) in Me3COH contg. 50 mg. hydroquinone stirred (N atm.) became intensely yellow and after a short induction period reacted exothermically to reflux temp. with sepn. of a cryst. hexamer (II) and oily polymers. After cessation of the exothermic reaction in 1-2 hrs. the mixt. was filtered and the filtrate distd. to yield unreacted H2C:CHCN, a crude fraction of 2 acrylonitrile dimers and phosphinite secondary products. Extn. with MeCN sepd. II from the polymers. The % yields of II, dimers, and polymers were tabulated. Whereas in the absence of solvent extremely vigorous polym. to a brown resin occurred, in the presence of Me3COH the reaction gave 6.2-41.3% yields of II, i.e., 1,1,4,4-tetrakis(2-cyanoethyl)-1,4-dicyano-trans-2-butene, m. 241-3.degree. (HCONMe2-MeCN). I (R = R1 = p-MeC6H4, R2 = Et) and I (R = R1 = Ph, R2 = Et) gave the 28% yields with small amts. of polymer, whereas I (R = R1 = Ph, R2 = CH2CMe3) and I (R = Ar, R = alk., R = Et) gave much polymer with practically complete conversion of H2C:CHCN. All diarylphosphinites independent of the ester groups in the presence of Me3COH gave a quant. yield of Ar2D(O)CH2CH2CN: Ar = Ph, m. 102-3.degree. (C6H6), b0.02 215-19.degree., M+ 255, and Ar = p-MeC6H4, b0.5 240.degree., M+ 283. Ph2PSET and Ph2POPh gave no oligomerization with H2C:CHCN. The reaction of Ar2POR with CH2:CHCN took place in accordance with the mechanism proposed by Takashina and Price (CA 56, 14075b).  
 IT 15590-02-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)  
 RN 15590-02-0 CAPLUS  
 CN 4-Octene-1,3,6,8-tetracarbonitrile, 3,6-bis(2-cyanoethyl)-, (E)- (8CI) (CA INDEX NAME)

Double bond geometry as shown.



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L4 ANSWER 31 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1966:104396 CAPLUS

DOCUMENT NUMBER: 64:105396

ORIGINAL REFERENCE NO.: 64:19920d-h

TITLE: Electrolytic polymerization of acrylonitrile

INVENTOR(S): Baizer, Manuel M.

PATENT ASSIGNEE(S): Monsanto Co.

SOURCE: 6 pp.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3245889		19660412	US 19630225	

AB Polymers of low mol. wt. are prepd. by controlled electrolysis of catholytes which are concd. solns. contg. acrylonitrile (I), and electrolyte salt, and a compd. that provides a relatively low concn. of protons. The process is generally carried out in the absence of free-radical-generating catalysts and of anions (except carbanions formed in the reaction) capable of catalyzing anionic polymerization of I. Inhibitors of free-radical catalysis may be present. Polymerization proceeds as a result of addn. of 2 electrons to a mol. of I to form a dicarbanion, which then reacts with addnl. I to give a cross-linked configuration. Termination of the polymerization process may be accomplished by increasing the concn. of protons, which add to the carbanion chains and inhibit further reaction. Aryl- and alkatenesulfonic acid salts are esp. suitable for use in anolyte solns., which are sepd. from the cathodic half-cell by a semipermeable membrane or divider. For example, in a jacketed glass vessel contg. 110 ml. Hg as the cathode, a catholyte was placed consisting of a soln. of I (contg. a trace of p-nitrosodimethylaniline) 23.1, tetraethylammonium p-toluenesulfonate (II)

25, HCONMe<sub>2</sub> (III) 82.3, and H<sub>2</sub>O 2.6 g. An Alundum cup immersed in the catholyte contained 15 ml. of 80 wt. % II dild. with 5 ml. H<sub>2</sub>O as the anolyte. A Pt anode was immersed in the anolyte. The anode and cathode were connected, resp., to the pos. and neg. terminals of a d.c. source.

A current of 0.1-0.5 amp. at a cathode voltage of -1.5 to -1.6 (vs. a satd. Hg2Cl2 electrode) was passed through the cell for a few min. with no apparent reaction. The voltage was then increased to cause a 1.4-amp. current to flow (at -1.85 v.), and the catholyte temp. rose to >40.degree. Electrolysis was discontinued after 1.45 amp.-hrs. and the catholyte was dild. with 300 ml. cold H<sub>2</sub>O. The resulting polymer was collected by filtration, washed with H<sub>2</sub>O, and dried to a wt. of 13.1 g. The product (m. 115-40.degree. osmometric mol. wt. 714) contained C

66.24, H 6.20, and N 25.15%, indicating a mol. of .apprx.14 units of I with the formula H(C<sub>3</sub>H<sub>3</sub>N)14H. It was sol. in Me<sub>2</sub>CO, acetonitrile (IV), concd.

HCl, and Ac<sub>2</sub>O. When the procedure of the above example was repeated with IV instead of III as cosolvent, the polymer formed did not sep. from the aq. bath, indicating that IV and H<sub>2</sub>O, together in the catholyte, furnished sufficient protons to terminate polymerization at a very early stage.

L4 ANSWER 32 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1966:104097 CAPLUS

DOCUMENT NUMBER: 64:104097

ORIGINAL REFERENCE NO.: 64:19568h, 19569a

TITLE: Nicotinic acid

INVENTOR(S): Baizer, Manuel M.

PATENT ASSIGNEE(S): Monsanto Co.

SOURCE: 3 pp.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

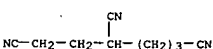
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3246000		19660412	US 19631218	

AB A process is described for the prepn. of nicotinic acid (I) from acrylonitrile (II). Thus, electrolysis of a catholyte of 60 g. tetraethylammonium p-toluenesulfonate, 3 g. H<sub>2</sub>O, and 160 g. II and an anolyte of 30 ml. 82% methyltributylammonium methylsulfate in 20 ml. H<sub>2</sub>O with 1.5-2.0 amp. for 3.5 amp.-hrs., the mixt. dild. with H<sub>2</sub>O, extd. with CH<sub>2</sub>Cl<sub>2</sub>, and the ext. fractionated to give as one fraction 1,3,6-tricyanohexane (III), b<sub>0.2</sub> 186-200.degree.. III was heated 24 hrs. at 150.degree. and 3000 psi. with Raney Co and H, the mixt. distd. to give 1,8-diamino-4-aminomethyloctane (IV), b<sub>0.2</sub> 0.25 98.5-103.0.degree., n<sub>D</sub> 27D 1.4822 and a small amt. of 3-(4-aminobutyl)piperidine (V), dl-HCl salt m. 228.8-30.0.degree.. Hydrogenation of IV in the presence of NH<sub>3</sub> gave V. Acetylation of V with Ac<sub>2</sub>O followed by dehydrogenation with 10% Pd on C at 200.degree. gave 3-(4-acetylaminoethyl)pyridine (VI). Oxidn. of VI with HNO<sub>3</sub> gave I.

IT 1772-25-4, 1,3,6-Hexanetricarbonitrile (prepn. of)

RN 1772-25-4 CAPLUS

CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 31 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

Polymers suitable for low-temp. molding and coating operations can be prepd. in this way.

IT 1572-42-5, 1,3,5,8-Octanetetracarboxynitrile 1572-43-6,

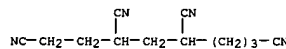
1,3,6,8-Octanetetracarboxynitrile 1772-25-4, 1,3,6-

Hexanetricarbonitrile

(formation in acrylonitrile soln. electrolysis)

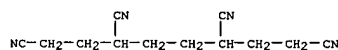
RN 1572-42-5 CAPLUS

CN 1,3,5,8-Octanetetracarboxynitrile (7CI, 8CI) (CA INDEX NAME)



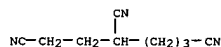
RN 1572-43-6 CAPLUS

CN 1,3,6,8-Octanetetracarboxynitrile (7CI, 8CI) (CA INDEX NAME)



RN 1772-25-4 CAPLUS

CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 33 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1965:409761 CAPLUS

DOCUMENT NUMBER: 63:9761

ORIGINAL REFERENCE NO.: 63:1695e-h, 1696a-c

TITLE: Syntheses with trichloroacetonitrile

INVENTOR(S): Coenen, Nax; Faust, Juergen; Ringel, Christian;

Mayer,

CORPORATE SOURCE: Roland

TECH. UNIV., DRESDEN, GERMANY

JOURNAL fuer Praktische Chemie (Leipzig) (1965),

27(5-6), 239-50

CODEN: JPCEAO; ISSN: 0021-8383

LANGUAGE: Journal

German

AB A series of compds. of the general type CCl<sub>3</sub>C(NH<sub>2</sub>):CRR' (I) was prepd. by the addn. of the appropriate CH-acidic compds. to CCl<sub>3</sub>CN (II) whereby an Ac group can be cleaved off acetylytically. Certain amines eliminate the CCl<sub>3</sub> group in I as CHCl<sub>3</sub> and lead to the corresponding R'NHC(NH<sub>2</sub>):CRR' (III). Several 2-substituted 3-amino-3-hydrazinoacrylic acid esters and nitriles were cyclized to pyrazoles. I (50 g.) and 30 g. CH<sub>2</sub>(CN)<sub>2</sub> in

150 cc. MeOH treated with stirring with 100 cc. H<sub>2</sub>O and 5 cc. satd. aq. AcONa and the mixt. stirred about 5 min. gave 54 g. I (R = R' = CN), m. 196.degree. [aq. HCONMe<sub>2</sub> (DMF) or iso-PrOH]. Similarly were prepd. trans-I (R = CN, R' = CO<sub>2</sub>Me) (IV), 80%, m. 145-6.degree. (iso-PrOH), and cis-I (R = Bz, R' = CN), 75%, m. 180.degree. (aq. iso-PrOH). BzCH<sub>2</sub>CO<sub>2</sub>Et (14 g.) and 10.5 g. II in 60 cc. MeOH stirred 0.5 hr. with 20 cc. satd. aq. AcONa and the mixt. heated 5 min. at 60.degree. gave 12 g. trans-I (R = CO<sub>2</sub>Et, R' = Bz) (V), m. 100-1.degree. (EtOH). Ac<sub>2</sub>CH<sub>2</sub> (50 g.) and 70 g. II in 200 cc. MeOH treated with stirring with 100 cc. satd. aq. AcONa during 2 hrs. gave 78 g. CCl<sub>3</sub>C(NH<sub>2</sub>):CHR (VI) (R = Ac). AcCH<sub>2</sub>CO<sub>2</sub>Me with

II gave similarly 55% VI (R = CO<sub>2</sub>Me), m. 53-4.degree. (aq. iso-PrOH).

AcCH<sub>2</sub>Bz and II (equimolar amts.) yielded 60% VI (R = Bz), m.

102-3.degree. (aq. iso-PrOH). The appropriate I (0.1 mole) added with stirring to 0.25 mole suitable amine and the mixt. heated 5 min. on the water bath gave

the corresponding III (R = CO<sub>2</sub>Me, R' = CN) (R'', m.p., and % yield given):

Pr,

131.degree. (1:1 aq. DMF), 65; iso-Pr, 106.degree. (3:1 MeOH-H<sub>2</sub>O and 1:1 iso-PrOH-H<sub>2</sub>O), 80; iso-Bu, 123.degree. (MeOH), 95; CH<sub>2</sub>:CHCH<sub>2</sub>, 110.5.degree. (MeOH), 80; Am, 146.5.degree. (MeOH), 90. Similarly was prepd. III (R = Bz, R' = CN, R'' = PhCH<sub>2</sub>), m. 199-200.degree. (MeOH), 95. The appropriate I (0.1 mole) in DMF treated with stirring with a suitable amine or with N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O and the mixt. dild. after 10 min. with H<sub>2</sub>O gave

the

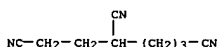
corresponding III (R, R', R'', m.p., % yield, cc. DMF, g. amine or N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O, and cc. H<sub>2</sub>O used are given): CO<sub>2</sub>Me, CN, NH<sub>2</sub> (VII),

171-3.degree.

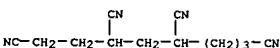
(MeOH), 70, 185, 10, 670; Bz, CN, NH<sub>2</sub>, 157-61.degree. (H<sub>2</sub>O), 70, 145, 15, 430; CO<sub>2</sub>Et, Bz, CH<sub>2</sub>CH<sub>2</sub>OH, 136-7.degree. (C<sub>6</sub>H<sub>6</sub>), 85, 170, 31, 675; CO<sub>2</sub>Et, CO<sub>2</sub>Et, NH<sub>2</sub>, 114-15.degree. (H<sub>2</sub>O), 65, 245, 15, 380. IV (0.1 mole) in 130 cc. DMF treated dropwise with stirring with 5 g. MeNH<sub>2</sub> in 100 cc. DMF and the mixt. after 10 min. heated at 70-5.degree. for 3 min. gave 14.1 g. trans-III (R = CO<sub>2</sub>Me, R' = CN, R'' = Me), m. 155-6.degree. (H<sub>2</sub>O). IV (85.2 g.) added with stirring and cooling to 50 g. EtNH<sub>2</sub> and the mixt. heated 0.5 hr. on the water bath gave 42.5 g. trans-III (R = CO<sub>2</sub>Me, R' = CN, R'' = Et) (VIII), m. 132.5-33.degree. (30% aq. MeOH). (CH<sub>2</sub>NH<sub>2</sub>)<sub>2</sub> (12 g.) treated with stirring with 84 g. IV (after 42 g. had been added, the

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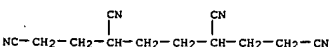
L4 ANSWER 33 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN (Continued)  
 mxt. was dild. with 30 cc. CHCl<sub>3</sub>) and heated 5 min. on the water bath  
 yielded 4.7 g. yellow [MeO<sub>2</sub>C(NC)C(CNH<sub>2</sub>)NHCH<sub>2</sub>]<sub>2</sub>, m. 284-8.degree.  
 (decompn.). I (R = R' = CO<sub>2</sub>Et) 2 (2 g.) added to 4 g. H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH and the  
 mxt. heated with stirring to soln., cooled, and dild. with 10 cc. H<sub>2</sub>O in  
 portions gave 1.3 g. III (R = R' = CO<sub>2</sub>Et, R'' = CH<sub>2</sub>CH<sub>2</sub>OH), m.  
 107-8.degree. (C<sub>6</sub>H<sub>6</sub>). IV (20 g.) in 100 cc. 10% aq. NaOH kept 3 days at  
 room temp. gave 2.2 g. CHCl<sub>3</sub>; the aq. phase neutralized with concd. HCl  
 gave 2 g. unreacted IV; further acidification to pH 2 gave 3 g. brownish  
 H<sub>2</sub>NC(OH):C(CN)CO<sub>2</sub>Me, m. 110-12.degree. (xylene). VIII (11.8 g.), 85 cc.  
 concd. H<sub>2</sub>SO<sub>4</sub>, and 150 cc. H<sub>2</sub>O treated with stirring during 0.5 min. at  
 10-15.degree. with 4.85 g. NaNO<sub>2</sub> in 15 cc. H<sub>2</sub>O yielded 4.85 g.  
 EtNHC(OH):C(CN)CO<sub>2</sub>Me, m. 127.5-28.5.degree. (ligroine, b. 80-90.degree.,  
 and then H<sub>2</sub>O). VII (15.6 g.) added as rapidly as possible to 300 cc.  
 refluxing PhOEt and the mxt. refluxed 140 min. yielded 15.45 g.  
 3,5-diamino-4-carbomethoxypyrazole (IX), m. 231-2.degree.. IX stirred  
 0.5 hr. with excess BzCl in C<sub>5</sub>H<sub>5</sub>N gave 40% 3-BzNH analog of IX, m.  
 185-6.degree. (MeOH). V (2 g.) in 8 cc. DMF treated with 1 cc. N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O  
 and then shaken with 30 cc. H<sub>2</sub>O yielded 1.2 g. 3-amino-4-carboxy-5-  
 phenylpyrazole (X), m. 167-9.degree. (C<sub>6</sub>H<sub>6</sub>). X (2 g.) in 25 cc. 4N NaOH  
 refluxed 2 hrs. yielded 1.1 g. 3-amino-5-phenylpyrazole, m. 126-7.degree.  
 (AcOEt-ligroine or aq. MeOH).  
 IT 1772-25-4, 1,3,6-Hexanetricarbonitrile  
 (prepn. of)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



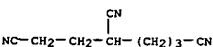
L4 ANSWER 35 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1965:409759 CAPLUS  
 DOCUMENT NUMBER: 63:9759  
 ORIGINAL REFERENCE NO.: 63:1695c-d  
 TITLE: Electrolytic reductive coupling. VII. A new class of  
 acrylonitrile oligomers  
 AUTHOR(S): Baizer, Manuel M.; Anderson, James D.  
 CORPORATE SOURCE: Monsanto Co., St. Louis, MO  
 SOURCE: Journal of Organic Chemistry (1965), 30(5), 1351-6  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Previous work on the electrolysis of acrylonitrile in aq.  
 quaternary ammonium salts under mildly alkaline conditions has been  
 extended into the region of high acrylonitrile-water ratios. At  
 very low water concns. acetone-soluble, relatively low-melting  
 polyacrylonitriles of average mol. wt. 600-1300 are formed. From  
 electrolysis of catholytes of intermediate (but still low) water content  
 there were isolated an acrylonitrile hydro trimer, consisting of  
 1,3,6-tricyanohexane, and a mxt. of hydro tetramers, consisting of  
 1,3,6,8- and 1,3,5,8-tetracyanooctane. The structures of these new  
 acrylonitrile oligomers were proved by conversion to and  
 independent synthesis of the corresponding esters. The electrolytic  
 hydropolymerization of acrylonitrile is viewed as proceeding  
 from an initially formed .alpha.,.alpha.'-adiponitrile dianion.  
 IT 1572-42-5, 1,3,5,8-Octanetetracarbonitrile 1572-43-6,  
 1,3,6,8-Octanetetracarbonitrile 1772-25-4, 1,3,6-  
 Hexanetricarbonitrile  
 (prepn. of)  
 RN 1572-42-5 CAPLUS  
 CN 1,3,5,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



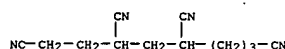
RN 1572-43-6 CAPLUS  
 CN 1,3,6,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



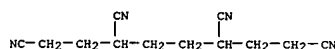
RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



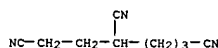
L4 ANSWER 34 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1965:409760 CAPLUS  
 DOCUMENT NUMBER: 63:9760  
 ORIGINAL REFERENCE NO.: 63:1695d-e  
 TITLE: Electrolytic reductive coupling. VIII. Utilization  
 and  
 new preparation of .alpha.-methyleneglutaronitrile  
 AUTHOR(S): Baizer, Manuel M.; Anderson, James D.  
 CORPORATE SOURCE: Monsanto Co., St. Louis, MO  
 SOURCE: Journal of Organic Chemistry (1965), 30(5), 1357-60  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB .alpha.-Methyleneglutaronitrile (I) has been electrolytically  
 hydromerized to yield 1,3,6,8-tetracyanooctane (II). Electrolysis of a  
 mixture of I and acrylonitrile yielded II and adiponitrile-the  
 two hydro dimers-and 1,3,6-tricyanohexane, the product of mixed coupling.  
 I and higher oligomers of acrylonitrile have been prepared by  
 the reaction of acrylonitrile with catalytic quantities of  
 tertiary phosphines in the presence of proton donors.  
 IT 1572-42-5, 1,3,5,8-Octanetetracarbonitrile 1572-43-6,  
 1,3,6,8-Octanetetracarbonitrile 1772-25-4, 1,3,6-  
 Hexanetricarbonitrile  
 (prepn. of)  
 RN 1572-42-5 CAPLUS  
 CN 1,3,5,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



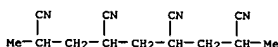
RN 1572-43-6 CAPLUS  
 CN 1,3,6,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

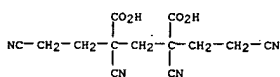


L4 ANSWER 36 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
 ACCESSION NUMBER: 1964:425859 CAPLUS  
 DOCUMENT NUMBER: 61:25859  
 ORIGINAL REFERENCE NO.: 61:4507d-e  
 TITLE: Coloration in acrylonitrile polymers  
 AUTHOR(S): Takata, Toshihiro; Hiroi, Iwao; Taniyama, Masakazu  
 CORPORATE SOURCE: Toho Rayon Co. Ltd., Tokushima, Japan  
 SOURCE: Journal of Polymer Science, Part A: General Papers  
 (1964), 2(4), 1567-85  
 CODEN: JPYAAR; ISSN: 0449-2951  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 AB The alkali and heat coloration of polyacrylonitrile (I) was investigated  
 by using model compds. 2,4-Dicyanopentane, 2,4,6-tricyanohexane, and  
 2,4,6,8-tetracyanononane were treated with alc. KOH, and the ultraviolet  
 spectra showed that partly hydrogenated naphthyridine-type structures  
 were formed which supported the postulate of Grassie, et al. (G. and McNeill,  
 CA 54, 16143a) for alkali-treated I. The intramol. ring closure  
 mechanism leading to a similar structure for heat-treated I, as proposed by  
 Grassie, et al., was also supported.  
 IT 64000-86-8, 2,4,6,8-Nonanetetracarbonitrile  
 (reaction with alc. KOH as model for discoloration of  
 acrylonitrile polymers)  
 RN 64000-86-8 CAPLUS  
 CN 2,4,6,8-Nonanetetracarbonitrile (7CI, 9CI) (CA INDEX NAME)

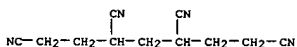


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L4 ANSWER 37 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
ACCESSION NUMBER: 1961:130746 CAPLUS  
DOCUMENT NUMBER: 55:130746  
ORIGINAL REFERENCE NO.: 55:24550b-d  
TITLE: Synthesis of 1,3,5,7-tetracyanoheptane  
AUTHOR(S): Vosburgh, W. C.; Green, D. L.  
CORPORATE SOURCE: E. I. du Pont de Nemours and Co., Inc., Wilmington, DE  
SOURCE: Journal of Organic Chemistry (1961), 26, 2118-19  
CODEN: JOCEAH; ISSN: 0022-3263  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB 1,3,5,7-Tetracyanoheptane (I) was synthesized as a short-chain model for the polyacrylonitrile mol. HCHO was added to cyanoacetic ester (II) to give di-Et .alpha.,.alpha.'-dicyanoglutarate (III); however, when the reaction temp. was not controlled, only Et .alpha.-cyanoacrylate was formed and it immediately polymerized to a low-mol.-wt. sticky polymer. Paraformaldehyde (60 g.) in 270 g. II treated during 4 hrs. with 4 ml.  
104 KOH in alc., after an addnl. 2 hrs. heating the mixt. adjusted to pH 4, and distd. gave 206 g. III, b.p. 4-0.6 150.5-1.5.degree., n<sub>D</sub>20 1.4500, d<sub>4</sub> 1.1416. III (180 g.), 300 ml. dioxane, and 102 ml. acrylonitrile treated with 38.5 g. Triton B over 1 hr. at 30-5.degree., the soln. stirred 16 hrs., poured into H<sub>2</sub>O, acidified, and extd. gave 160 g. 1,3,5,7-tetracyano-3,5-di-carbethoxyheptane (IV). Crude IV (160 g.) mixed in 0.5 hr. with 84 g. KOH in 600 ml. MeOH and 400 ml. alc., the salt sepd., and washed gave 39 g. K .alpha.,.alpha.'-dicyano-.alpha.,.alpha.'-bis(.beta.-cyanoethyl)glutarate (V), m. 198-206.degree. (decompn.). V (30 g.) in 250 ml. AcOH kept 2.5 hrs. at 90-100.degree., evapd., the residue extd. with CH<sub>2</sub>Cl<sub>2</sub>, dried, and evapd. gave 4.5 g. I, m. 106-7.degree. (MeOH).  
IT 100725-15-3, Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)-(and derivs.)  
RN 100725-15-3 CAPLUS  
CN Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)- (6CI) (CA INDEX NAME)



IT 64918-24-7, 1,3,5,7-Heptanetetracarbonitrile (prepn. of)  
RN 64918-24-7 CAPLUS  
CN 1,3,5,7-Heptanetetracarbonitrile (6CI, 9CI) (CA INDEX NAME)



L4 ANSWER 38 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN  
ACCESSION NUMBER: 1959:77452 CAPLUS  
DOCUMENT NUMBER: 53:77452  
ORIGINAL REFERENCE NO.: 53:13993c-1,13994a-f  
TITLE: Oligomers. XIII. The oligomers of acrylonitrile. 1. Syntheses  
AUTHOR(S): Zahn, Helmut; Schafer, Paul  
CORPORATE SOURCE: Univ. Heidelberg, Germany  
SOURCE: Chemische Berichte (1959), 92, 736-44  
CODEN: CHBEAM; ISSN: 0009-2940  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB cf. C.A. 53, 13047c. MeCH(CN)CO<sub>2</sub>Et (30 g.) in 50 g. Me<sub>3</sub>COH treated dropwise with 13 g. CH<sub>2</sub>:CHCN after the addn. of 0.75 cc. 30% KOH in MeOH, the mixt. stirred 3 hrs. at 35.degree., neutralized with 2N HCl, dild. with 400 cc. H<sub>2</sub>O, extd. with Et<sub>2</sub>O, and the ext. distd. gave 22 g. MeC(CN)(CO<sub>2</sub>Et)CH<sub>2</sub>CH<sub>2</sub>CN (I), b.p. 114-16.degree.. I (9 g.) and 100 cc.  
481 HBr refluxed 8 hrs., evapd. in vacuo, the residue dissolved in H<sub>2</sub>O, extd. with Et<sub>2</sub>O, and the ext. dried and evapd. gave 6 g. HO<sub>2</sub>CCHMe(CH<sub>2</sub>)<sub>2</sub>CO<sub>2</sub>H, m. 77.degree. (C<sub>6</sub>H<sub>6</sub>). I (20 g.) in 40 cc. refluxing EtOH treated dropwise with 6.2 g. KOH in 30 cc. EtOH, the mixt. filtered, the residue washed with abs. EtOH, the residual salt dried (18 g.) dissolved in a little H<sub>2</sub>O, the soln. treated with an equiv. amt. of concd. HCl, extd. with Et<sub>2</sub>O, and the ext. dried and evapd. left 13 g. oily, very hygroscopic HO<sub>2</sub>CCHMe(CH<sub>2</sub>)<sub>2</sub>CH<sub>2</sub>CN (II). II (12 g.) in 50 cc. C<sub>5</sub>H<sub>5</sub>N and 3 g. Cu powder refluxed 1 hr. at 110.degree., cooled, filtered, the C<sub>5</sub>H<sub>5</sub>N removed in vacuo, the residue treated with N HCl, extd. with EtOAc, and the ext. worked up yielded 6 g. MeCH(CN)CH<sub>2</sub>CH<sub>2</sub>CN, b.p. 135.degree., n<sub>D</sub>20 1.4312. CH<sub>2</sub>(CO<sub>2</sub>Et)<sub>2</sub> (116 g.), 2 g. Na, 30 cc. abs. EtOH and 73 g. CH<sub>2</sub>:CMeCO<sub>2</sub>Me in 500 cc. dry Et<sub>2</sub>O refluxed 5 hrs., cooled, washed with 12 cc. AcOH in 120 cc. H<sub>2</sub>O, then with H<sub>2</sub>O, dried, and worked up yielded 140 g. MeO<sub>2</sub>CCHMeCH<sub>2</sub>CH<sub>2</sub>CN (III), b.p. 155-60.degree.. III (138 g.) in 230 g. Me<sub>3</sub>COH treated with 10-15 drops CH<sub>2</sub>:CHCN from a 29-g. portion and then with 1 cc. 30% KOH-MeOH at 35.degree., the remainder of the CH<sub>2</sub>:CHCN added while twice 1 cc. KOH-MeOH was added, stirred 2 hrs. at 30.degree., neutralized with 2N HCl, and poured into 1 l. H<sub>2</sub>O, and the crude product recrystd. from petr. ether yielded 148 g. MeO<sub>2</sub>CCHMeCH<sub>2</sub>CH<sub>2</sub>CN (CO<sub>2</sub>Et)<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CN (IV), needles, m. 42.degree.. IV (55 g.) in 150 cc. concd. HCl refluxed  
2 hrs., treated with 50 cc. concd. HCl, refluxed 6 hrs., kept overnight, filtered from NH<sub>4</sub>Cl, treated 2-3 times with HCl, again filtered, the filtrate evapd. in vacuo, the oily residue dried over H<sub>2</sub>SO<sub>4</sub> and KOH, and the solid residue powdered and extd. in a Soxhlet app. with Et<sub>2</sub>O yielded 37.5 g. HO<sub>2</sub>CCHMeCH<sub>2</sub>CH<sub>2</sub>CN (CO<sub>2</sub>H)<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H (V), m. 95.degree. (Me<sub>2</sub>CO and CHCl<sub>3</sub>). V (1.5 g.) heated at 150.degree./12 mm. and the sublimate resublimed yielded 0.7 g. cyclic anhydride of V, needles, m. 82.degree.. V (15 g.) in 30 cc. Ac<sub>2</sub>O refluxed 6 hrs., evapd. up to 180.degree., heated at 210.degree./12 mm., and distd. gave 5 g. 3-methyl-4-oxocyclohexane-carboxylic acid, b.p. 128-30.degree., m. 94.degree.. V (20 g.) in 100 cc. concd. NH<sub>4</sub>OH evapd. on the water bath in vacuo left 23 g. NH<sub>4</sub> salt of V. The NH<sub>4</sub> salt (20 g.) in H<sub>2</sub>O treated with 46 g. AgNO<sub>3</sub> in H<sub>2</sub>O pptd. the amorphous Ag salt of V, decomp. 205.degree.. Dry Br (9 cc.) in 46 cc. dry CCl<sub>4</sub> treated with 30 g. Ag salt of V at 50.degree. in small portions, refluxed 0.5 hr., filtered, and the filtrate shaken with aq. satd.

Kamal Saeed

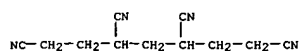
L4 ANSWER 37 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN (Continued)

L4 ANSWER 38 OF 39 CAPLUS COPYRIGHT 2003 ACS ON STN (Continued)  
and 10% aq. KOH contg. NaCl, dried, and distd. yielded 6 g. .alpha.-methyl-.gamma.-bromoethyl-.gamma.-butyrolactone, b.p. 0.1 73.degree..  
V (12 g.), 48 cc. abs. EtOH, and 1 cc. concd. H<sub>2</sub>SO<sub>4</sub> refluxed 7 hrs. gave 12 g. tri-Et ester of V, b.p. 0.7 110-15.degree.. V (15 g.), 45 cc. abs. MeOH, and 1.2 concd. HCl gave similarly 13 g. tri-Me ester (VI) b.p. 98-101.degree.. VI (40 g.) and 32 cc. liquid NH<sub>3</sub> kept 4 weeks at room temp. in a sealed tube yielded 32.5 g. triamide (VII) of V, needles, m. 169.degree. (Me<sub>2</sub>CO). VII (10 g.) and 10 cc. POCl<sub>3</sub> heated with stirring to 70.degree., cooled, dissolved in iced H<sub>2</sub>O, neutralized with Na<sub>2</sub>CO<sub>3</sub>, shaken with EtOAc, and the ext. distd. gave 1.0 g. NCCH<sub>2</sub>CH<sub>2</sub>CH(CN)CH<sub>2</sub>CH(CN)Me, b.p. 0.1 80.degree. (bath), n<sub>D</sub>20 1.4646. NCCH<sub>2</sub>CO<sub>2</sub>Et (VIII) (56.6 g.) in 100 g. dioxane treated dropwise with 53 g. CH<sub>2</sub>:CHCN while 4.5 cc. 30% KOH-MeOH was added in 4 portions, stirred 2 hrs. at room temp., neutralized with 2N HCl, and poured into 1 l. 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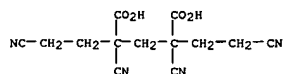


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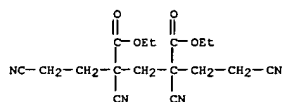
L4 ANSWER 38 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)  
Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)- 107273-45-0,  
Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)-, diethyl ester  
(prepn. of)  
RN 64918-24-7 CAPLUS  
CN 1,3,5,7-Heptanetetracarbonitrile (6CI, 9CI) (CA INDEX NAME)



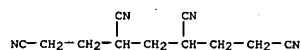
RN 100725-15-3 CAPLUS  
CN Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)- (6CI) (CA INDEX NAME)



RN 107273-45-0 CAPLUS  
CN Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)-, diethyl ester (6CI)  
(CA INDEX NAME)



L4 ANSWER 39 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1955:59012 CAPLUS  
DOCUMENT NUMBER: 49:59012  
ORIGINAL REFERENCE NO.: 49:11363b-d  
TITLE: The properties of nitrile binary systems and their  
relation to polyacrylonitrile solubility  
AUTHOR(S): Phibbs, M. K.  
CORPORATE SOURCE: DuPont Co. Can., Kingston, ON  
SOURCE: Journal of Physical Chemistry (1955), 59, 346-53  
CODEN: JPCHAX; ISSN: 0022-3654  
JOURNAL  
DOCUMENT TYPE: Unavailable  
LANGUAGE: Unavailable  
AB The solvent powers of liquids for 1,3,5,7-tetracyanoheptane and for  
polyacrylonitrile are qualitatively the same. Good nitrile solvents are  
characterized by heat evolution and vol. expansion on mixing with  
glutaronitrile. A qual. correlation exists between excess entropies of  
mixing and nonideal vol. changes on mixing in the nitrile binary systems.  
Vapor pressure and viscosity data are given for some glutaronitrile  
binary systems. No correlation exists between viscosity and any of the other  
measured properties. Good nitrile solvents must be composed of mols.  
with high dipole moments, a low hydrocarbon/polar group ratio, and no  
self-H-bonding power.  
IT 64918-24-7, 1,3,5,7-Heptanetetracarbonitrile  
(soly. of)  
RN 64918-24-7 CAPLUS  
CN 1,3,5,7-Heptanetetracarbonitrile (6CI, 9CI) (CA INDEX NAME)



09893858dd/mm/yyyy>

=> logoff

ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF

LOGOFF? (Y)/N/HOLD:y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

181.60

330.36

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-25.39

-25.39

STN INTERNATIONAL LOGOFF AT 11:51:16 ON 14 DEC 2003